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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,020	01/08/2004	William L. Brodsky	EN9-99-008US2	7119

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SCHMEISER, OLSEN + WATTS
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EXAMINER

NGUYEN, DILINH P

ART UNIT PAPER NUMBER

2814

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/754,020	Applicant(s) BRODSKY ET AL.	
	Examiner DiLinh Nguyen	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-19, 21, 22 and 35-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-19, 21, 22 and 35-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/8/04, 8/6/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 1/8/04 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 10, 12, 21 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Raiser et al. (U.S. Pat. 6049124).

Raiser et al. disclose a method of forming an electronic package, comprising the steps of:

providing an electronic component 310 having a first featurized surface 316 (fig. 3A or 5) and a second surface 312; and

removing a portion of the second surface such that the second surface is substantially arcuate, wherein a distance between the first surface and the second

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surface continuously increases from a periphery of the electronic component 310 to near a center of the electronic component (fig. 3A).

- Regarding claim 12, Raiser et al. disclose the step of removing at least one edge from a portion of the electronic component 310 (fig. 3A).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11, 13-17 and 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raiser et al. (U.S. Pat. 6049124) in view of AAPA (fig. 1).

- Regarding claims 11 and 36, Raiser et al. substantially disclose all the limitations as claimed above and Raiser et al. also disclose electrically mounting the first featurized surface 316 of the electronic component 310 to a substrate 412, but fail to disclose mounting an element to the second surface of the electronic component.

However, AAPA (fig. 1) discloses a method of forming an electronic package, comprising the steps of: mounting an element 22 to the second surface of the electronic component 18, providing a substrate 12 having an opening therein; and forming an electronic component 18 mounted within the opening of the substrate (fig. 1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process step of Raiser et al. by mounting

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mounting an element to the second surface of the electronic component, as taught by AAPA (fig. 1), in order to provide good heat dissipation for the semiconductor package (fig. 1).

- Regarding claim 13, Raiser et al. disclose that the substrate 412 is a carrier (fig. 3A).
- Regarding claims 14 and 37-38, AAPA discloses that the element 22 is a cover plate (fig. 1).
- Regarding claims 15 and 39, AAPA discloses that the element 22 is a heat sink (fig. 1).
- Regarding claims 16-17 and 40-41, AAPA discloses that the element 22 is mounted to the second surface of the electronic component using an adhesive 26, and wherein the adhesive is a thermally conductive reflowable material (fig. 1).

5. Claims 8-19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raiser et al. (U.S. Pat. 6049124) in view of Taguchi et al. (U.S. Pat. 4272781).

Raiser et al. substantially disclose all the limitations as claimed above except for using a profiling tool to remove a portion of the second surface and wherein the profiling tool has a concave profiling surface.

However, Taguchi et al. disclose a method of forming a device comprising a profiling tool, and wherein the profiling tool has a concave profiling surface (column 6, lines 20-24). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process step of Raiser et al. by

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having a profiling too, and wherein the profiling tool has a concave profiling surface, as taught by Taguchi et al., in order to maintain at a constant distance from the running surface (column 6, lines 25-26).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (571) 272-1712. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DLN



**HOAI PHAM
PRIMARY EXAMINER**